

U.S. Patent Application Serial No. 09/926,033
Response dated September 22, 2003
Reply to OA of May 19, 2003

present claims.

Specific reference is made to **Lipson's** Example V (page 35, line 15) in which the Examiner notes component (h) (page 36, line 5), phenoxydiethoxyethyl acrylate, as **Lipson's** component A(i). Specifically, the Examiner states that this corresponds to $m=2$, $n=4$ and R_2 =unsubstituted phenyl. In Applicants' understanding, however, $n=3$ for this compound. Nonetheless, Applicants shall interpret $n=4$ for the sake of this response.

Applicants respectfully submit that one would not have "readily envisioned" n in a range of 6-12 as this phrase is defined in *Ex parte A*, 17USPQ2d 1716 (Bd. Pat. App. & Interf. 1990), as discussed in MPEP 2131.02 (page 2100-72). By this definition, a compound is considered "readily envisioned" if the number of possible compounds of a generic formula is limited such that one of skill in the art can "at once envisage" the specific compound within the generic formula.

In contrast, in the present case, the number of compounds encompassed by **Lipson's** formula is enormous. In particular, **Lipson** allows m to be 1 to 4 and n to be 1 to 12, which includes 48 different combinations of m and n . Moreover, **Lipson's** R_2 need not be phenyl or substituted phenyl; it may also be substituted or unsubstituted naphthenyl, alkyl or cycloalkyl.

Applicants note that one may look to the preferred embodiments to determine which compounds can be anticipated. (See *In re Petering* 301 F.2d676, 133USPQ 275 (CCPA 1962)). In this case, Example V of **Lipson** has a value of $n=4$ (by the Office Action standard), where Applicants' claim 1 requires a corresponding value m of 6 to 20. Hence, this specific example of **Lipson** does not disclose the value of m in claim 1. Further, **Lipson** does not anticipate formulas (V)

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and (VI) in claims 7 and 8, which require a substituted phenyl group.

Applicants' Response to the Rejection of Claims 7-11, 14-15, 18-20 and 23 Under 35 U.S.C. 102(b) as Being Anticipated by *Ishikawa* (JP 10-020491).

Claims 7-11, 14-15, 18-20 and 23 stand rejected under §102 as being anticipated by *Ishikawa*. Applicants respectfully traverse and request withdrawal of the rejection based on the following comparison of the reference and present invention.

As with *Lipson* described above, *Ishikawa* discloses a large number of possible compounds. Specifically of importance to the present case, *Ishikawa* discloses acrylates wherein the repeating number of alkylene groups may be 3-20. However, *Ishikawa* does not teach concrete examples of acrylates with the repeating number of 6 or more. In all the disclosed working examples, *Ishikawa* does not use acrylates other than an acrylate wherein the repeating number of alkyleneoxy group is 4 or below.

As such, Applicants respectfully submit that given the number of compounds that *Ishikawa* may encompass, the currently claimed invention would not be "at once envisioned" by one of skill in the art.

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Applicants' Response to the Rejection of Claims 2-3, 14-15 and 19-20 Under 35 U.S.C. 103(a) as Being Unpatentable over *Lipson et al.* (EP 128014 A2) as Applied to Claims 1, 4-13, 16-18 and 21-23 above, and Further in View of *Ishikawa et al.* (JP 10-020491 A) and Claims 24-26 in View of *Kawashima* (US 6,048,953).

Claims 2, 14 and 19 recite the further limitation of utilizing the 2,4,5-triarylimidazole dimer in the compounds disclosed in claims 1, 7 and 8, respectively. As noted in regard to the rejection under 35 U.S.C. 102(b) over *Lipson* and *Ishikawa et al.*, neither reference specifically discloses an acrylate of more than 4 repeating alkylenoxy groups. This lack of a specific teaching of alkylenoxy groups at a range of 6 to 18 demonstrates that the inventors of the references were not aware of the specific advantages obtained when photopolymerizable compounds contain repeating numbers of alkylenoxy groups or ethylenoxy groups of 6 to 18. Namely, the present inventors have obtained surprising and unexpected results from selection of the compounds within the claimed range. (See *In re Peterson*, 65 USPQ2d 1379, 1383 (Fed. Cir. 2003) (a showing of unexpectedly superior properties may demonstrate non-obviousness of a claimed narrow range from broader ranges disclosed in the art)).

In order to explain more fully and disclose the nature of these unexpected results and the differences between the present invention and those of *Lipson* and *Ishikawa*, Applicants have conducted the experiment described in the attached §132 Declaration. This declaration sets forth the experiment done by one of the present inventors, Mr. Takeshi Oohashi. Mr. Oohashi conducted experiments based on the specific teachings of *Lipson* and *Ishikawa*. As is demonstrated by Example 1 and Experiments 1 and 2 of the declaration, when the range of alkylenoxy groups is 6 to

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18 according to the present invention, no scum and excellent adhesion occur. Note in particular the result obtained in Experiment 1 with nonylphenoxyhexaethylenoxy acrylate. However, when only 1 to 4 alkylenoxy groups are utilized as taught by *Lipson* and *Ishikawa*, scumming occurs (*see* Comparative Example 2¹ and Experiment 3 which had one and four alkylenoxy groups, respectively). As such, neither reference suggests the importance of Applicants' claimed range.

Hence, Applicants respectfully submit that the present invention as claimed would not be obvious to one skilled in the art because neither *Ishikawa* nor *Lipson* teach or suggest that significantly improved results are obtained when the alkylenoxy groups of the compound are present in the narrower range of 6-18.

In summary, because of the use of the specific photo-polymerizable compounds of either (C), (C') or (C'') as disclosed in claims 1, 7 and 8 respectively, in place of the acrylates taught by *Lipson et al.* and *Ishikawa*, the claimed photosensitive resin composition excels in low tendency to scum (*see* Declaration herewith). Such effects are not expected from the teachings of the cited references, because the cited references teach none of the specific compounds (C), (C') and (C'') nor the effects made by the use of the compound (C), (C') or (C''). Therefore, Applicants respectfully submit the claimed invention satisfies the requirement under 35 U.S.C. §102(b) and §103(a).

The applicants respectfully submit that no new matter has been added. It is believed that this Amendment is fully responsive to the Office Action dated **May 19, 2003**.

In view of the aforementioned remarks and declaration, claims, as previously amended, are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

Attachments: Declaration
Petition for Extension of Time w/fee

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